<u>IN THE CLAIMS</u>:

The following is a complete listing of the claims, and replaces all earlier version and listings.

1.   (currently amended): A method of generating a color separation table that stores grid point data of printing material colors used in a printing apparatus correspondingly to grid points that are defined by predetermined input colors for converting the predetermined input colors to the printing material colors, ~~which include~~ <u>the printing material colors including</u> a special color other than <u>the predetermined input colors and the printing material</u> colors corresponding to ~~vertexes~~ <u>vertices</u> of a solid formed by the grid points, said method comprising:

<u>a</u> special color point setting step<u>, of</u> [[for]] setting a point of the special color on a side connecting two ~~vertexes~~ <u>vertices</u> of the solid;

<u>a secondary color point setting step, of setting a point of secondary color between the special color and a color of the vertex that is one of two vertices of the side on which the special color is set;</u>

<u>a</u> table data generating step<u>, of</u>[[for]], for the grid points on a line connecting two ~~vertexes~~ <u>vertices</u> of black and white on the solid, a <u>plurality of</u> line<u>s</u> running on the surface of the solid and connecting ~~vertexes~~ <u>the two vertices through the vertices corresponding to the predetermined input colors or the printing material colors on</u> the solid<u>,</u> a line running on the surface of the solid and connecting the ~~vertexes~~ <u>two vertices through the set special color point and a line running on the surface of the solid and</u>

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connecting the two vertices through the set secondary color point, obtaining the grid points

data based on the color measurements of predetermined patches; and

an interpolation step, of [[for]] dividing the solid by the lines into a plurality

of solids which include the lines as a side and executing an interpolation process on the

plurality of divided solids based on the grid point data of the grid points on the lines of

each of the divided solids to obtain grid point data for the grid points located on other than

the lines in each of the divided solids.

2. (canceled).

3. (currently amended): A method as claimed in claim 1, wherein said

interpolation step, when executing the interpolation on the plurality of divided solids to

obtain the grid point data of the divided solids, for the divided solid including the line

containing the point of the special color or the divided solid including the line containing

the point of a secondary color of the special color and a color of the vertex, executes

includes executing an enlargement process in which a coordinate of the point of the special

color or the point of the secondary color is moved to one of two vertexes vertices of the

side on which the points of the special color or the secondary color are set, executes

executing the interpolation process on the enlarged solid, executes executing a reduction

process in which the coordinate of the point of the special color or the point of the

secondary color is moved to the original coordinate, and obtains obtaining the grid point

data of the grid points on the original divided solid based on the grid points and grid point

data obtained by the interpolation on the enlarged solid.

4. (currently amended): A method as claimed in claim 1, wherein each of the divided solids is a tetrahedron and the interpolation process is executed such that the tetrahedron is divided into a plurality of triangles and the interpolation is executed on each of the divided triangles based on the grid point data of the grid points on three sides of ~~said~~ each <u>respective one of the three</u> triangle<u>s</u> to obtain the grid point data located on the surface of ~~said~~ each triangle.

5. (original): A method as claimed in claim 4, wherein the interpolation process based on the grid point data of the grid points on three sides of the triangle is a process based on the grid point data on the two sides of three sides, or a process using a finite element method based on the grid point data on any of one side, two sides or three sides of three sides.

6. (original): A method as claimed in claim 1, wherein the printing material colors other than the special color are four colors of cyan, magenta, yellow and black or six colors of light cyan and light magenta in addition to cyan, magenta, yellow, black.

7. (original): A method as claimed in claim 1, wherein the special color is a color of orange.

8. (original): A method as claimed in claim 1, wherein the predetermined input colors are colors of red, green and blue.

9. (currently amended): An image processing apparatus for generating a color separation table that stores grid point data of printing material colors used in a printing apparatus correspondingly to grid points that are defined by predetermined input colors for converting the predetermined input colors to the printing material colors, ~~which include~~ the printing material colors including a special color other than the predetermined input colors and the printing material colors corresponding to ~~vertexes~~ vertices of a solid formed by the grid points, said apparatus comprising:

special color point setting means for setting a point of the special color on a side connecting two ~~vertexes~~ vertices of the solid;

secondary color point setting means for setting a point of secondary color between the special color and a color of the vertex that is one of two vertices of the side on which the special color is set;

table data generating means for, for the grid points on a line connecting two vertexes of black and white on the solid, a plurality of line running on the surface of the solid and connecting ~~vertexes~~ the two vertices through the vertices corresponding to the predetermined input colors or the printing material colors on the solid, a line running on the surface of the solid and connecting the ~~vertexes~~ two vertices through the set special color point and a line running on the surface of the solid and connecting the two vertices through the set secondary color point, obtaining the grid points data based on the color measurements of predetermined patches; and

interpolation means for dividing the solid by the lines into a plurality of solids which include the lines as a side and executing an interpolation process on the plurality of divided solids based on the grid points data of the grid points on the lines of

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each of the divided solids to obtain grid point data for the grid points located on other than

the lines in each of the divided solids.

10. (canceled).

11. (currently amended): An image processing apparatus as claimed in

claim 9, wherein said interpolation means, when executing the interpolation on the

plurality of divided solids to obtain the grid point data of the divided solids, for the divided

solid including the line containing the point of the special color or the divided solid

including the line containing the point of a secondary color of the special color and a color

of the vertex, executes an enlargement process in which a coordinate of the point of the

special color or the point of the secondary color is moved to one of two ~~vertexes~~ vertices of

the side on which the points of the special color or the secondary color are set, executes the

interpolation process on the enlarged solid, executes a reduction process in which the

coordinate of the point of the special color or the point of the secondary color is moved to

the original coordinate, and obtains the grid point data of the grid points on the original

divided solid based on the grid points and grid point data obtained by the interpolation on

the enlarged solid.

12. (currently amended): An image processing apparatus as claimed in

claim 9, wherein each of the divided solids is a tetrahedron and the interpolation process is

executed such that the tetrahedron is divided into a plurality of triangles and the

interpolation is executed on each of the divided triangles based on the grid point data of the

grid points on three sides of ~~said~~ each <u>respective one of the three</u> triangle<u>s</u> to obtain the grid

point data located on the surface of ~~said~~ each triangle.

13. (original): A image processing apparatus as claimed in claim 12,

wherein the interpolation process based on the grid point data of the grid points on three

sides of the triangle is a process based on the grid point data on the two sides of three sides,

or a process using a finite element method based on the grid point data on any of one side,

two sides or three sides of three sides.

14. - 16. (canceled).

17. (new): A method of generating a color separation table that stores

grid point data of printing material colors used in a printing apparatus correspondingly to

grid points that are defined by predetermined input colors for converting the predetermined

input colors to the printing material colors, the printing material colors including a special

color other than the predetermined input colors and the printing material colors

corresponding to vertices of a solid formed by the grid points, said method comprising:

a special color point setting step, of setting a point of the special color on a

side connecting two vertices of the solid;

a table data generating step, of, for the grid points on a line connecting two

vertices of black and white on the solid, a plurality of lines running on the surface of the

solid and connecting of the two vertices through the vertices corresponding to the

predetermined input colors or the printing material colors on the solid and a line running on

the surface of the solid and connecting the two vertices through the set special color point, obtaining the grid point data based on the color measurements of predetermined patches; and

an interpolation step, of dividing the solid by the lines into a plurality of solids which include the lines as a side and executing an interpolation process on the plurality of divided solids based on the grid points data of the grid points on the lines of each of the divided solids to obtain grid point data for the grid points located on other than the lines in each of the divided solids,

wherein the interpolation process, in a case where the divided solid includes the line containing the point of a secondary color between the special color and a color of the vertex that is one of two vertices of the side on which the special color is set, includes executing an enlargement process in which a coordinate of the point of the special color or the point of the secondary color is moved to one of two vertices of the side on which the points of the special color or the secondary color are set, executing the interpolation process on the enlarged solid, executing a reduction process in which the coordinate of the point of the special color or the point of the secondary color is moved to the original coordinate, and obtaining the grid point data of the grid points on the original divided solid based on the grid points and grid point data obtained by the interpolation on the enlarged solid.

18. (new): A method as claimed in claim 17, wherein each of the divided solids is a tetrahedron and the interpolation process is executed such that the tetrahedron is divided into a plurality of triangles and the interpolation is executed on each of the divided

triangles based on the grid point data of the grid points on three sides of each of the triangles to obtain the grid point data located on the surface of each triangle.

19. (new): A method as claimed in claim 18, wherein the interpolation process based on the grid point data of the grid points on three sides of the triangle is a process based on the grid point data on the two sides of three sides, or a process using a finite element method based on the grid point data on any of one side, two sides or three sides of three sides.

20. (new): A method as claimed in claim 18, wherein the printing material colors other than the special color are four colors of cyan, magenta, yellow and black or six colors of light cyan and light magenta in addition to cyan, magenta, yellow, black.

21. (new): A method as claimed in claim 18, wherein the special color is a color of orange.

22. (new): A method as claimed in claim 18, wherein the predetermined input colors are colors of red, green and blue.

23. (new): An image processing apparatus for generating a color separation table that stores grid point data of printing material colors used in a printing apparatus correspondingly to grid points that are defined by predetermined input colors for converting the predetermined input colors to the printing material colors, the printing

material colors including a special color other than colors corresponding to vertices of a

solid formed by the grid points, said apparatus comprising:

special color point setting means for setting a point of the special color on a

side connecting two vertices of the solid;

table data generating means for, for the grid points on each of a line

connecting two vertices of black and white on the solid, a line running on the surface of the

solid and connecting a plurality of vertices of the solid and a line running on the surface of

the solid and connecting a plurality of the vertices of the solid as well as the point of the

special color, obtaining the grid point data based on the color measurement of

predetermined patches; and

interpolation means for dividing the solid by the lines into a plurality of

solids which include said line as a side and executing an interpolation process on the

plurality of divided solids based on the grid point data of the grid points on the lines to

obtain grid point data for the grid points located on other than the lines in each of the

divided solids,

wherein said interpolation means, when executing the interpolation on the

plurality of divided solids to obtain the grid point data of the divided solids, for the divided

solid including the line containing the point of the special color or the divided solid

including the line containing the point of a secondary color of the special color and a color

of the vertex, executes an enlargement process in which a coordinate of the point of the

special color or the point of the secondary color is moved to one of two vertices of the side

on which the points of the special color or the secondary color are set, executes the

interpolation process on the enlarged solid, executes a reduction process in which the

coordinate of the point of the special color or the point of the secondary color is moved to

the original coordinate, and obtains the grid point data of the grid points on the original

divided solid based on the grid points and grid point data obtained by the interpolation on

the enlarged solid.